

Central Dauphin School District  
Grade 5 Math: Unit 2 Parent Letter  
Addition, Subtraction, Multiplication, and Division of Fractions



Dear Parents,

Over the next few weeks, we will be learning about **adding, subtracting, multiplying, and dividing fractions** in math! The information below will help you to support your child as they learn these exciting, yet important fifth grade math skills.

**The GOAL:**

By the end of the unit, your child should be able to perform computations using the four operations with fractions.

**Add and Subtract Fractions**

Students must be able to add and subtract fractions. Always remember to find a common denominator before adding or subtracting.

**Adding Fractions**

$$\frac{1}{4} + \frac{3}{8}$$

Find a common denominator:

$$4 \times 2 = 8$$
$$8 \times 1 = 8$$

Write equivalent fractions using the common denominator.

$$\frac{1}{4} = \frac{1 \times 2}{4 \times 2} = \frac{2}{8}$$

$$\frac{3}{8} = \frac{3 \times 1}{8 \times 1} = \frac{3}{8}$$

Then, add the equivalent fractions.

$$\frac{2}{8} + \frac{3}{8} = \frac{5}{8}$$

**Subtracting Fractions**

$$\frac{3}{4} - \frac{2}{3}$$

Find a common denominator:

$$4 \times 3 = 12$$
$$3 \times 4 = 12$$

Write equivalent fractions using the common denominator.

$$\frac{3}{4} = \frac{3 \times 3}{4 \times 3} = \frac{9}{12}$$

$$\frac{2}{3} = \frac{2 \times 4}{3 \times 4} = \frac{8}{12}$$

Then, subtract the equivalent fractions.

$$\frac{9}{12} - \frac{8}{12} = \frac{1}{12}$$

**Multiply Fractions**

Students must be able to multiply fractions by fractions.

Multiply a fraction by a fraction:

$$\frac{2}{3} \times \frac{4}{5} = \frac{8}{15}$$

**Step 1:** Multiply the numerators ( $2 \times 4 = 8$ ).

**Step 2:** Multiply the denominators ( $3 \times 5 = 15$ ).

Multiply a mixed number by a mixed number:

$$4 \frac{2}{5} \times 1 \frac{1}{2} = 6 \frac{3}{5}$$

**Step 1:** Rewrite the mixed numbers as improper fractions.

$$4 \frac{2}{5} = \frac{22}{5} \text{ and } 1 \frac{1}{2} = \frac{3}{2}$$

**Step 2:** Multiply the improper fractions.

$$\frac{22}{5} \times \frac{3}{2} = \frac{66}{10}$$

**Step 3:** Simplify the improper fraction to a mixed number. Reduce if necessary.

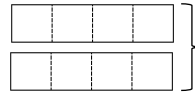
$$\frac{66}{10} = 6 \frac{6}{10} = 6 \frac{3}{5}$$

## Divide Fractions

Students must be able to divide with fractions.

Divide a whole number by a fraction:

You can use a model:

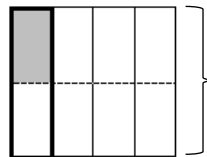

$$2 \div \frac{1}{4} = 2 \times 4 = 8$$

$$2 \div \frac{1}{4} \circ \circ \circ$$

Think... how many equal groups of  $\frac{1}{4}$  are there in 2?

Divide a fraction by a whole number:

You can use a model:


$$\frac{1}{4} \div 2 = \frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$$

$$\frac{1}{4} \div 2 \circ \circ \circ$$

Think... what is  $\frac{1}{4}$  divided into 2 equal groups?

Grade 5 Math: PA Core Math Standards in Unit 2

CC.2.1.5.C.1: Use the understanding of equivalency to add and subtraction fractions.

CC.2.1.5.C.2: Apply and extend previous understandings of multiplication and division to multiply and divide fractions.

### -- KEY MATH VOCABULARY --

**Equivalent:** having the same value

**Numerator:** tells how many fractional parts in a whole or group that have been counted (It is the top number in a fraction.)

**Denominator:** tells how many total fractional parts there are in a whole group (It is the bottom number in a fraction.)

**Common Denominator:** a common multiple of two or more denominators

**Mixed Number:** a number that is made up of a whole number and a fraction (example:  $3\frac{1}{2}$ )

**Improper Fraction:** a fraction in which the numerator is larger than the denominator

### -- HOW YOU CAN HELP AT HOME --

- A tape measure or a ruler is a useful tool that can help your child find sums and differences. Have your child find sums (such as  $\frac{5}{8} + \frac{1}{4}$ ) and differences (such as  $\frac{7}{8} - \frac{1}{2}$ ) using a tape measure or ruler.

- Help your child identify where the fractions are represented on the tape measure or ruler and have them show you how they can find the sum or difference.

- You can practice multiplication with fractions by looking at your favorite recipes. Work with your child to solve problems such as "One batch of the recipe calls for  $\frac{3}{4}$  cup of flour. How much flour would we need to make  $\frac{1}{2}$  batch? What if we want to make 2 batches?" Ask your child to draw a visual model to show how to find the amount.